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PATENT APPLICATION

ATTORNEY DOCKET NO. 20001670-4

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Klaus Kehrlé et al.

Confirmation No.: 4640

Application No.: 09/747,678

Examiner: R. R. Yang

Filing Date: December 22, 2000

Group Art Unit: 2672

Title: METHOD FOR INTERACTIVE CONSTRUCTION OF VIRTUAL 3D CIRCUIT MODELS

Mail Stop Appeal Brief - Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF REPLY BRIEF

Transmitted herewith is the Reply Brief with respect to the Examiner's Answer mailed on April 3, 2007.

This Reply Brief is being filed pursuant to 37 CFR 1.193(b) within two months of the date of the Examiner's Answer.

(Note: Extensions of time are not allowed under 37 CFR 1.136(a))

(Note: Failure to file a Reply Brief will result in dismissal of the Appeal as to the claims made subject to an expressly stated new ground rejection.)

No fee is required for filing of this Reply Brief.

If any fees are required please charge Deposit Account 08-2025.

I hereby certify that this document is being
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Date of Transmission: May 22, 2007

Respectfully submitted,
Klaus Kehrlé et al.

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Docket No.: 20001670-4
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Klaus Kehrlé et al.

Application No.: 09/747,678

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Art Unit: 2672

For: METHOD FOR INTERACTIVE
CONSTRUCTION OF VIRTUAL 3D CIRCUIT
MODELS

Examiner: R. R. Yang

APPELLANT'S REPLY BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

REPLY TO EXAMINER'S ANSWER UNDER 37 CFR 1.193(B)

This Reply Brief is in response to the Examiner's Answer mailed April 3, 2007 and is in furtherance of the Notice of Appeal and Appellant's Second Appeal Brief, each dated December 5, 2006.

No fee is required for this REPLY BRIEF.

This brief contains items under the following headings pursuant to M.P.E.P. § 1208:

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|------|--|
| I. | Status of Claims |
| II. | Grounds for Rejection to be Reviewed on Appeal |
| III. | Arguments |
| IV. | Conclusion |

I. STATUS OF CLAIMS

The status of the claims remains as identified in the Second Appeal Brief submitted December 5, 2006, which is as follows:

A. Total Number of Claims in Application

There are 18 claims pending in application.

B. Current Status of Claims

- 1. Claims canceled: 1-10**
- 2. Claims withdrawn from consideration but not canceled: None**
- 3. Claims pending: 11-28**
- 4. Claims allowed: None**
- 5. Claims rejected: 11-28**

C. Claims On Appeal

The claims on appeal are claims 11-28

II. GROUNDS FOR REJECTION TO BE REVIEWED ON APPEAL

Whether the rejection of claims 11-15, 21-24, and 26-28 under 35 U.S.C. § 103(a) over Mukouchi et al. is proper.

Whether the rejection of claims 16-19 under 35 U.S.C. § 103(a) over Mukouchi et al. in view of Bentley et al. is proper.

Whether the rejection of claims 20 and 25 under 35 U.S.C. § 103(a) over Mukouchi et al. in view of Noyama is proper.

III. ARGUMENTS

Appellant respectfully traverses the outstanding rejections of the pending claims, and requests that the Board reverse the outstanding rejections in light of the remarks contained in Appellant's Second Appeal Brief of December 5, 2007 (hereinafter the Second Appeal Brief) and this Reply Brief. As in the Second Appeal Brief, Appellant argues many of the rejected claims separately. Thus, Appellant respectfully asserts that separately argued claims do not stand or fall together, *see* 37 C.F.R. § 41.31(c)(1)(vii). Moreover, Appellant reasserts those arguments that are presented for the separately argued claims in the Second Appeal Brief. However, for brevity, Appellant does not include those arguments herein, but instead submits the following supplemental remarks in reply to the Examiner's Answer.

A. Claims 11, 12, and 14

In response to Appellant having asserted, simply because *Mukouchi* discloses an assembly in which a door model is allowed to move about an axis, that the limitation of claim 1 reciting "calculating a reduction in degrees of freedom between said two CAD objects caused by said identified coupling" is not met, Appellee asserts that "it is inherent that a CAD requires software to calculate the movements and placements of the objects [and a]s for the degrees of freedom, it is dependent on the allowable translational and rotational movement of a body," Examiner's Answer at pages 10 and 11. As previously pointed out by Appellant, the Appellee has not properly established a rejection based upon inherency, *see Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

Moreover, even ignoring the improper basis for an inherency rejection, the disclosure of *Mukouchi* relied upon by the Appellee does not meet the claim. *Mukouchi* expressly teaches "by virtue of the junction based on the two points . . . there will not be restricted any rotation around the axis," column 15, lines 35-38 (emphasis added). Clearly if there is no restriction in the rotation around the axis, meaning that the door model 114 may rotate through the door frame model 112, there would also logically be no restriction on any other movement of the door model. Accordingly, Appellant asserts that there is nothing in the disclosure of *Mukouchi* to

teach or suggest calculation of a reduction in degrees of freedom between two CAD objects caused by an identified coupling.

In response to Appellant showing the *Mukouchi* does not teach “displaying an indication of said reduction in said degrees of freedom in association with the display of said two CAD objects,” as recited in claim 1, and that the feature relied upon by the Appellee in rejecting the claim is not part of the system of *Mukouchi* but rather is an artifact of the patent drawings, the Appellee asserts that the *Mukouchi* patent drawing artifact looks similar to an embodiment of Appellant’s claimed feature. Specifically, Appellee states that “Examiner contend that appellant’s disclosure refers to Figures 4-11 to show various visual feedback and remaining degrees of freedom [and that t]hese figures are similar to Mukouchi’s figures,” Examiner’s Answer at page 11. However, *Mukouchi*’s patent drawing figures including illustrative artifacts similar in appearance to indications of reduction in degrees of freedom which are displayed when manipulating CAD objects, as expressly recited by claim 1, does not teach or suggest the system in *Mukouchi* actually displaying such artifacts when the system is used to manipulate CAD objects.

Moreover, Appellant points out that the single artifact shown in Figure 24 of *Mukouchi*, and relied upon by the Appellee to reject the claim, does not and cannot be read to meet the claim. Interpreting the artifact shown in Figure 24 in the best possible light for Appellee’s position, the artifact merely shows an available degree of freedom. There is nothing to show a reduction in degrees of freedom. Whereas, the embodiment of Figures 8-11 in Appellant’s specification, for example, clearly show a reduction in degrees of freedom, see page 8, lines 15-19, and page 10, lines 13-27. Accordingly, Appellant asserts that there is nothing in the disclosure of *Mukouchi* to teach or suggest displaying an indication of the reduction in degrees of freedom.

B. Claim 13

In responding to Appellant having pointed out that only previously disconnected (non-coupled) parts were assembled in the portion of *Mukouchi* relied upon to reject the limitation of

claim 13 reciting “verifying that said identified coupling is consistent with a prior coupling between said two CAD objects” (emphasis added), the Appellee identifies a particular portion of the previously identified disclosure which teaches that “the movements of the assembling part models are checked,” Examiner’s Answer at page 12. However, the foregoing does not address the limitation of the claim. The claim expressly recites verifying that the identified coupling between two CAD objects is consistent with a prior coupling between the two CAD objects. The rejection of record and the Appellee’s statements regarding the claim simply do not address the limitation.

C. Claim 15

In response to Appellant pointing out that the rejection of record with respect to claim 15 does not address the recited “calculating a reduction in degrees of freedom caused by said relative positioning of said two CAD objects” (emphasis added), the Appellee merely again asserts that *Mukouchi* teaches that after the door model is attached to the door frame model it has a lesser degree of freedom, Examiner’s Answer at page 13. The foregoing continues to fail to address the claim language. The rejection of record and Appellee’s statements do not address the claim limitation.

D. Claims 21, 22, and 24

In response to Appellant having asserted, simply because *Mukouchi* discloses an assembly in which a door model is allowed to move about an axis, that the limitation of claim 21 reciting “determining a reduction in degrees of freedom caused by said identified coupling” is not met, Appellee asserts that “from the assembling processing in Figure 22 to the explanatory diagram [Figure 24], a reduction in degrees of freedom is determined,” Examiner’s Answer at page 13. However, simply because movement between the assembled parts is allowed, *Mukouchi* does not show that a determination of a reduction of an available degree of freedom has been made. For example, *Mukouchi* expressly teaches “by virtue of the junction based on the two points . . . there will not be restricted any rotation around the axis,” column 15, lines 35-38 (emphasis added). Clearly if there is no restriction in the rotation around the axis, meaning that

the door model 114 may rotate through the door frame model 112, there would also logically be no restriction on any other movement of the door model. Accordingly, Appellant asserts that there is nothing in the disclosure of *Mukouchi* to teach or suggest determining a reduction in degrees of freedom caused by an identified coupling.

In response to Appellant showing the *Mukouchi* does not teach “displaying an indication of degrees of freedom associated with said two CAD objects after application of said identified coupling,” as recited in claim 21, and that the feature relied upon by the Appellee in rejecting the claim is not part of the system of *Mukouchi* but rather is an artifact of the patent drawings, the Appellee relies upon the brief description of Figure 24 in *Mukouchi* to show that the figure shows a degree of freedom. The description of the figure and the figure itself are part of the *Mukouchi* patent, not part of the system described therein. Therefore the figure and its description include artifacts which are not part of the *Mukouchi* system and which would not have been obvious to have included in the *Mukouchi* system by one of ordinary skill in the art. Simply because a patent figure includes an artifact used in a narrative describing the system therein which is similar in appearance to an embodiment of the claimed indication of degrees of freedom does not render the feature of the claim obvious. There must be a reason why one of ordinary skill in the art would have been motivated to modify *Mukouchi* to have included artifacts of the patent drawings used in describing the system of *Mukouchi* in the CAD displays provided by *Mukouchi*. Appellant asserts that there is nothing in the disclosure of *Mukouchi* to teach or suggest displaying a CAD system displaying an indication of degrees of freedom associated with two CAD objects after application of an identified coupling.

E. Claim 23

In responding to Appellant having pointed out that only previously disconnected (non-coupled) parts were assembled in the portion of *Mukouchi* relied upon to reject the limitation of claim 23 reciting “determining whether said identified coupling is consistent with a prior coupling applied to one of said two CAD objects” (emphasis added), the Appellee identifies a particular portion of the previously identified disclosure which teaches that “the movements of the assembling part models are checked,” Examiner’s Answer at page 14. However, the

foregoing does not address the limitation of the claim. The claim expressly recites determining whether the identified coupling between two CAD objects is consistent with a prior coupling applied to one of the two CAD objects. The rejection of record and the Appellee's statements regarding the claim simply do not address the limitation.

F. Claims 26 and 27

In response to Appellant having asserted, simply because *Mukouchi* discloses an assembly in which a door model is allowed to move about an axis, that the limitation of claim 26 reciting "determining a reduction in degrees of freedom caused by said identified coupling" is not met, Appellee asserts that "from the assembling processing in Figure 22 to the explanatory diagram [Figure 24], a reduction in degrees of freedom is determined," Examiner's Answer at page 14. However, simply because movement between the assembled parts is allowed, *Mukouchi* does not show that a determination of a reduction of an available degree of freedom has been made. For example, *Mukouchi* expressly teaches "by virtue of the junction based on the two points . . . there will not be restricted any rotation around the axis," column 15, lines 35-38 (emphasis added). Clearly if there is no restriction in the rotation around the axis, meaning that the door model 114 to rotate through the door frame model 112, there would also logically be no restriction on any other movement of the door model. Accordingly, Appellant asserts that there is nothing in the disclosure of *Mukouchi* to teach or suggest determining a reduction in degrees of freedom caused by an identified coupling.

In response to Appellant showing the *Mukouchi* does not teach "displaying an indication of degrees of freedom associated with said two CAD objects after application of said identified coupling," as recited in claim 26, and that the feature relied upon by the Appellee in rejecting the claim is not part of the system of *Mukouchi* but rather is an artifact of the patent drawings, the Appellee relies upon the brief description of Figure 24 in *Mukouchi* to show that the figure shows a degree of freedom. The description of the figure and the figure itself are part of the *Mukouchi* patent, not part of the system described therein. Therefore the figure and its description include artifacts which are not part of the *Mukouchi* system and which would not have been obvious to have included in the *Mukouchi* system by one of ordinary skill in the art.

Simply because a patent figure includes an artifact used in a narrative describing the system therein which is similar in appearance to an embodiment of the claimed indication of degrees of freedom does not render the feature of the claim obvious. There must be a reason why one of ordinary skill in the art would have been motivated to modify *Mukouchi* to have included artifacts of the patent drawings used in describing the system of *Mukouchi* in the CAD displays provided by *Mukouchi*. Appellant asserts that there is nothing in the disclosure of *Mukouchi* to teach or suggest displaying a CAD system displaying an indication of degrees of freedom associated with two CAD objects after application of an identified coupling.

G. Claim 28

In responding to Appellant having pointed out that only previously disconnected (non-coupled) parts were assembled in the portion of *Mukouchi* relied upon to reject the limitation of claim 28 reciting “determining whether said coupling identified by said user is consistent with prior couplings applied to one of said two CAD objects” (emphasis added), the Appellee identifies a particular portion of the previously identified disclosure which teaches that “the movements of the assembling part models are checked,” Examiner’s Answer at page 15. However, the foregoing does not address the limitation of the claim. The claim expressly recites determining whether the identified coupling between two CAD objects is consistent with prior couplings applied to one of the two CAD objects. The rejection of record and the Appellee’s statements regarding the claim simply do not address the limitation.

IV. CONCLUSION

In view of the above, Appellant requests that the rejections of record be reversed. The required fee for this response is enclosed. If any additional fee is due, please charge Deposit Account No. 08-2025, under Order No. 20001670-4, from which the undersigned is authorized to draw.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with § 1.6(a)(4).

Dated: May 22, 2007

Signature: Lisa de Cordova
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Respectfully submitted,

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Date: May 22, 2007